

I CLAIM:

1. A quick-release tube clamp in a modular lower limb prosthetic system for connecting a pylon/foot component to a socket, said pylon/foot component having a tubular pylon with an outer diameter, said quick-release tube clamp comprising:

5           a tubular portion, said tubular portion having at least one formed slot along a longitudinal length of said tubular portion, said tubular portion having a formed cylindrical opening with an inner diameter slightly larger than said outer diameter of said tubular pylon,

10           an annular socket portion at the upper end of the tubular portion for attaching to the socket,

              a clamp portion near the lower end of said tubular portion, said clamp portion locking said tubular portion around said tubular pylon in a locking position when said tubular pylon is inserted into said tubular portion, said clamp portion releasing said tubular portion from said tubular pylon, said clamp portion comprising:

15           a pair of opposing tabs located on opposite sides of said formed slot,

20           a handle, said handle having a cam at one end, said handle curved to follow the shape of said tubular portion, said cam operative in a lock position on said pair of opposing tabs for holding said pair of opposing tabs in said locking position by reducing the width of said formed slot.

2. The quick-release tube clamp of claim 1 wherein said clamp portion is at the lower end of said tubular portion.

3. The quick-release tube clamp of claim 1 wherein said clamp portion is offset from the lower end of said tubular portion.

4. The quick-release tube clamp of claim 1 wherein said clamp portion further comprises:

5 a thumb nut interconnected to a bolt, said bolt operatively connected to said handle, said thumb nut abutting one of said opposing tabs to provide adjustment to the width of said formed slot when said handle is operated in said locking position.

5. The quick-release tube clamp of claim 4 wherein said thumb nut has an internal nylon insert for holding said thumb nut to said bolt after adjustment.

6. The quick-release tube clamp of claim 1 wherein said clamp portion further comprises:

a camming cup disposed between one of said opposing tabs and said cam.

7. The quick-release tube clamp of claim 6 wherein the camming cup further comprises:

5 a nylon insert to provide a low wear point when said cam abuts against said camming cup to operate said quick-release tube clamp into said locking position.

8. The quick-release tube clamp of claim 1 wherein said handle terminates in a raised end, opposite to the end having said cam.

5. The quick-release tube clamp of claim 1 wherein said handle has sufficient length to curve around said tubular portion so as to extend at least 45° from the diameter of the tubular portion through the formed slot, said handle having an interior surface abutting against the outer surface of the tubular portion at least in said 45° region.

10. A quick-release tube clamp in a modular lower limb prosthetic system for connecting a pylon/foot component to a socket, said pylon/foot component having a tubular pylon with an outer diameter, said quick-release tube clamp comprising:

5           a tubular portion, said tubular portion having a formed slot along a longitudinal length of said tubular portion, said tubular portion having a formed cylindrical opening with an inner diameter slightly larger than said outer diameter of said tubular pylon,

10           an annular socket portion at the upper end of the tubular portion for attaching to the socket,

15           a clamp portion near the lower end of said tubular portion, said clamp portion locking said tubular portion around said tubular pylon in a locking position when said tubular pylon is inserted into said tubular portion, said clamp portion releasing said tubular portion from said tubular pylon, said clamp portion comprising:

              a pair of opposing tabs located on opposite sides of said formed slot,

20           a handle, said handle having a cam at one end, said handle curved to follow the shape of said tubular portion, said cam operative in a lock position on said pair of opposing tabs for holding said pair of opposing tabs in said locking position by reducing the width of said formed slot, said handle terminating in a raised end, opposite to the end having said cam, said handle having a sufficient length to curve around said tubular portion so as to extend at least 45° from the diameter of the tubular portion through the formed slot, said handle having an interior surface abutting against the outer surface of the tubular portion at least in said 45° region.

25           11. The quick-release tube clamp of claim 10 wherein said clamp portion is at the lower end of said tubular portion.

12. The quick-release tube clamp of claim 10 wherein said clamp portion is offset from the lower end of said tubular portion.

13. The quick-release tube clamp of claim 12 wherein said thumb nut has an internal nylon insert for holding said thumb nut to said bolt after adjustment.

14. The quick-release tube clamp of claim 10 wherein said clamp portion further comprises:

a camming cup disposed between one of said opposing tabs and said cam.

15. The quick-release tube clamp of claim 14 wherein the camming cup further comprises:

a nylon insert to provide a low wear point when said cam abuts against said camming cup to operate said quick-release tube clamp into said locking position.

16. A quick-release method for releasing a prosthetic pylon/foot component inserted in a tube clamp, said tube clamp connected to a socket, said method comprising:

5 moving a single lever on the tube clamp from a locked position to a released position,

increasing the width of a formed slot in said tube clamp as a cam on said single lever is operated in response to moving the single lever from said locked position to said unlocked position,

10 removing the prosthetic pylon/foot component from the tube clamp when the single lever is in the released position.